

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Cancelled).

Claim 2. (Previously Presented).

The control system according to claim 30,  
wherein the operating system is a real-time operating  
system.

Claim 3. (Previously Presented).

The control system according to claim 30,  
wherein a running-time system (software processor or virtual  
machine) is installed on the operating system, said running-time  
system converting program instructions of the controlling and  
regulating software into a representation which can be processed  
by the one or several microprocessors of the control system, and  
which assumes the control over the processing.

Claim 4. (Previously Presented).

The control system according to claim 3,  
wherein the running-time system is a soft-PLC or soft-SPS  
and emulates a stored-program control.

Claim 5. (Currently Amended).

The control system according to claim 30,  
wherein the operating system without ~~the~~ an additional  
running-time system supports the use of a programming language  
for the controlling and regulating software.

Claim 6. (Previously Presented).

The control system according to claim 3,  
wherein the controlling and regulating software is  
programmed in a programming language for stored-program control  
systems.

Claim 7. (Cancelled).

Claim 8. (Cancelled).

Claim 9. (Previously Presented).

The control system according to claim 32,  
wherein the industrial PC or industrial microcomputer and  
the associated data memory are arranged in a compact, screened  
housing that can be installed in the control panel of an  
aggregate for generating compressed air or vacuums, and whose  
front side has the control surface with plain text display,  
whereas the back wall or the top wall and/or the bottom wall  
and/or the side wall of the housing are provided with the digital  
and/or analog inputs and outputs and the data interfaces.

Claim 10. (Cancelled).

Claim 11. (Previously Presented).

The control system according to claim 30,  
wherein the data of each called-up data profile including  
the data determining the occupancy of the inputs and outputs are  
variable by means of the control surface and/or via a data  
interface.

Claim 12. (Previously Presented).

The control system according to claim 11,  
wherein several different, password-protected,  
hierarchically graded levels are set up for changing the data  
profiles or other adjustments.

Claim 13. (Previously Presented).

The control system according to claim 31,  
wherein for the purposes of trouble analysis and analysis of  
the operating performance, the history memory retains a record of  
certain events or conditions that occurred in the past over a  
large span of time, such a record containing the date, the clock  
time, the status and explanations of such events or conditions.

Claim 14. (Previously Presented).

The control system according to claim 13,  
wherein the content of the history memory can be called up  
in plain text on the display and/or via the communicative data  
interfaces.

Claim 15. (Previously Presented).

The control system according to claim 13,

wherein an evaluation algorithm for the history memory, with the help of which the performance of the control system can be optimized for the future by means of the stored events and/or conditions from the past.

Claim 16. (Previously Presented).

The control system according to claim 32, wherein the software of the industrial PC or industrial microcomputer is freely programmable locally via one of the interfaces or via remote data transmission, and is thus adaptable in any desired way.

Claim 17. (Previously Presented).

The control system according to claim 16, wherein the software of the industrial PC or industrial microcomputer contains a stored-program timer function capable of controlling the aggregate according to a preset time program.

Claim 18. (Previously Presented).

The control system according to claim 32, wherein aggregate-specific software fuzzy controllers can be installed on the industrial PC or industrial microcomputer, said software fuzzy controllers each comprising an aggregate-specific

control base of an inference machine and a condition interface associated with the inputs, as well as an action interface associated with the outputs.

Claim 19. (Previously Presented).

The control system according to claim 32, further comprising a serial RS-232 interface serving as one of the standardized communicative interfaces.

Claim 20. (Previously Presented).

The control system according to claim 32, further comprising a serial RS-485 interface serving as one of the standardized communicative interfaces.

Claim 21. (Previously Presented).

The control system according to claim 32, further comprising a profi-bus interface serving as one of the standardized communicative interfaces.

Claim 22. (Previously Presented).

The control system according to 32,  
wherein the system bus of the industrial PC or industrial microcomputer is provided with an interface for connecting

extension pc motherboards preferably with additional inputs and outputs.

Claim 23. (Previously Presented).

The control system according to claim 9,  
wherein the inputs and outputs are designed in the form of  
plug terminals located on the back wall and/or the top wall  
and/or the bottom wall and/or the side walls of the housing.

Claim 24. (Previously Presented).

The control system according to claim 9,  
wherein the control surface has a protected foil keyboard  
and an LCD-display, whereby all functions of the control system  
can be called up in a menu-guided manner via the foil keyboard  
and are readable with their data on the LCD-display in different  
languages and/or unit systems in a manner that is reversible  
online.

Claim 25. (Previously Presented).

The control system according to claim 9,  
wherein the control surface has light-emitting diodes for  
monitoring and displaying the main functions and for failure  
and/or maintenance reports.

Claim 26. (Previously Presented).

The control system according to claim 32,  
further comprising additional free inputs and outputs.

Claim 27. (Previously Presented).

The control system according to claim 26,  
wherein the free outputs can be occupied via the control  
surface or the data interfaces with any signals present in the  
control system.

Claim 28. (Previously Presented).

The control system according to claim 27,  
wherein additional data profiles exist for occupying the  
free outputs, said additional data profiles being recallable  
and/or variable via the control surface or the data interfaces.

Claim 29. (Previously Presented).

The control system according to claim 30,  
wherein a test mode can be called up via the menu control,  
in conjunction with which test mode the values of the analog  
and/or digital inputs and outputs can be individually queried  
locally or via remote data transmission when the aggregate is in  
operation, and the conditions of the outputs, furthermore, can be

preset in any desired way independently of the control logic when the aggregate is shut down.

Claim 30. (Previously Presented).

An electronic control system for aggregates generating compressed air and vacuum, with programmable electronic circuits for controlling, regulating and monitoring the technical functions of such aggregates, in particular the functions of the compressed air generator or of the vacuum pump and of the associated drives, as well as of the treatment of the compressed air,

wherein the electronic control system is configured as a standardized control system for employment in a multitude of different aggregates for generating compressed air or vacuum, and has an industrial PC or industrial microcomputer monitored and controlled by an operating system and comprising one or a plurality of microprocessors and a central data memory containing at least controlling and regulating software and a multitude of aggregate-specific data profiles in a recallable manner, said data profiles comprising the data belonging to the aggregates and their components with respect to the controlling and regulating algorithms, and/or the controlling parameters, and/or the regulating parameters, and/or the technical characteristics and

limit values, and/or the aggregate-specific occupancy of the inputs and outputs.

Claim 31. (Previously Presented).

The control system according to claim 30, wherein the software in the central data memory comprises:

- (a) components for control and regulating logic;
- (b) components for activation of an operating surface (operating and observation software);
- (c) components for management of history memory (order processing);
- (d) components for communication via interfaces (communication applications);

said components accessing a common data base in which said data profiles are also stored.

Claim 32. (Previously Presented).

The control system according to claim 30 comprising:

(a) a plurality of digital and analog inputs and outputs for detecting a condition and for controlling the connected aggregate components, whose occupancy can be fixed via the controlling and regulated software;

(b) a control surface with plain text display; and

(c) at least one standardized data interface for communicatively connecting primary, secondary or subordinated systems.